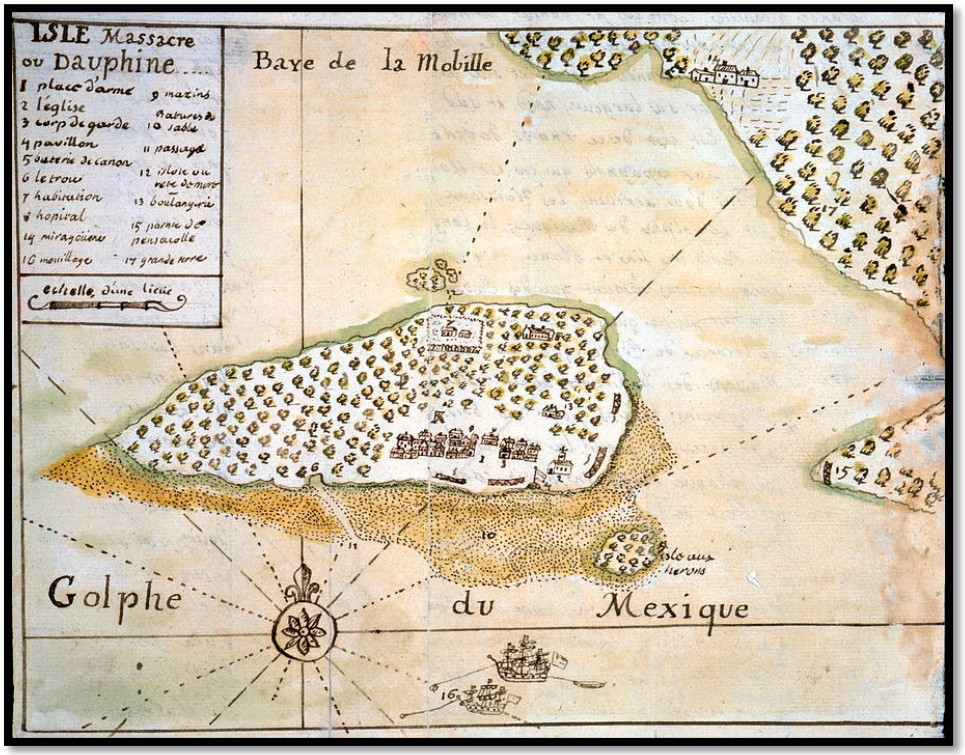
PCARG Cultural Resource Report
Beach and Nearshore Areas

A Phase I Cultural Resource Survey of a Proposed Beach and Dune Restoration Area on the West End of Dauphin Island, Alabama



Isle Massacre ou Dauphine. Map of the French settlement at Dauphin Island in Mobile Bay ca., 1719, by Dumont de Montigny (1747).

Submitted
To

South Coast Engineers
PO Box 72, Fairhope Alabama 36533

This survey was conducted for a Section 106 project on behalf of the National Fish and Wildlife Foundation

February 29, 2024

Submitted
By

Pre-Columbian Archeological Research Group, Inc.
2018 Wahalaw Nene, Tallahassee, FL 32301

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identified for analysis.

Figure 30. Aerial photograph showing transect coverage with highlighted area for further analysis.

Abstract

South Coast Engineers, LLC (SCE) of Fairhope, Alabama, was contracted by the Town of Dauphin Island (with grant funding from NFWF) to design a beach and dune restoration project for the west end of Dauphin Island, Alabama. Pre-Columbian Archaeological Research Group, Inc. (PCARG) was then hired by SCE to carry out a Phase I archaeological survey of the area of potential effect. This work entailed an extensive pedestrian survey followed by a magnetometer survey. The results of PCARG's investigation indicated no presence of cultural resources along the south shoreline of the Island earmarked for beach renourishment and dune restoration. Consequently, PCARG recommends no further testing be performed.

This survey complies with the criteria of the National Historic Preservation Act of 1966 (Public Law 89-665), the National Environmental Policy Act of 1969 (Public Law 11-190), Executive Order 11593, and the Advisory Council on Historic Preservation Procedures for the protection of historic and cultural properties (36 CFR Part 800). The results of the investigation were designed to furnish SCE with the Phase I archaeological survey data required to comply with cultural resource legislation and regulations mandated by the federal government and the State of Alabama.

Introduction

Dauphin Island is part of a complex estuarine system made up of a series of barrier islands and spits along the northern coast of the Gulf of Mexico. These islands extend from the mouth of the Ocklocknee River in Florida to the Pearl River in Mississippi. The actual Alabama coastal margin covers a distance of 56 miles from state to state. Dauphin Island is situated at the mouth of Mobile Bay, latitude 30 15', longitude 88 10', and is the largest and easternmost of the barrier islands. It measures 14 ½ miles long and 1 ½ miles wide at its widest point (Chermock et al. 1974) [Figure 1].

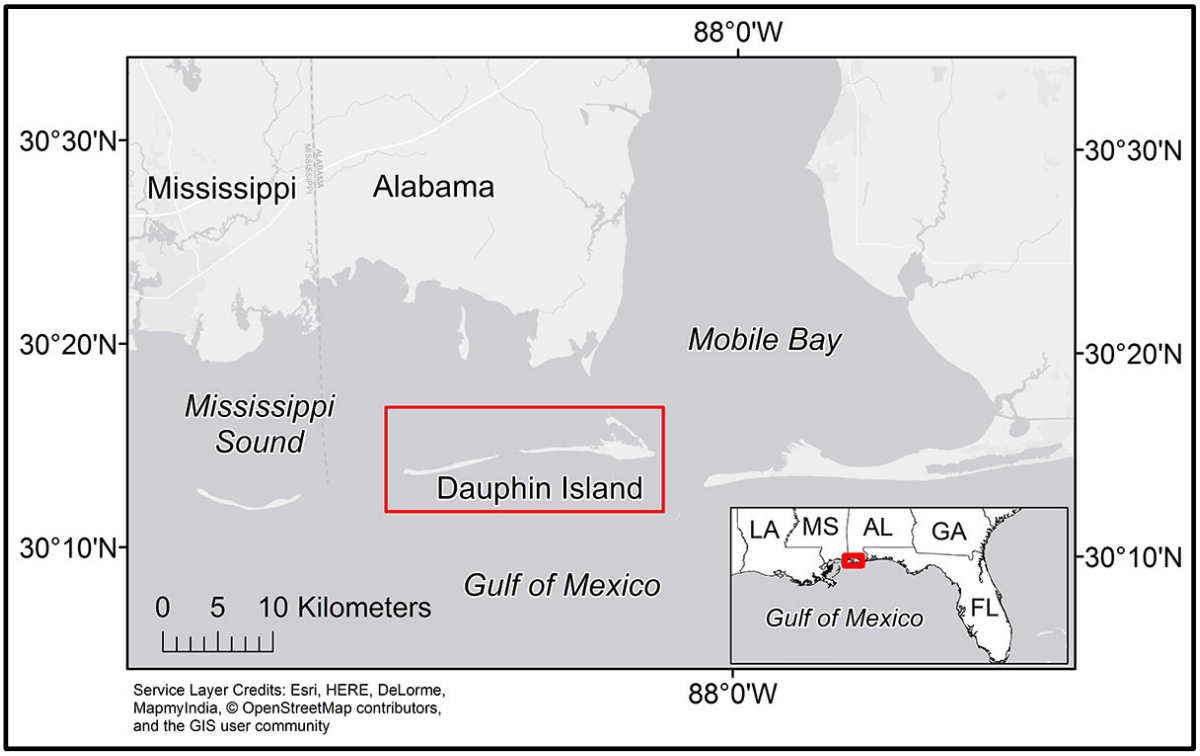

Figure 1. Map of Dauphin Island showing its relation to Mobile Bay with latitude and longitude coordinates (www.coastal.er.usgs.gov 2022).

The Dauphin Island Phase I project was conducted for South Coast Engineers of Fairhope, Alabama, coastal engineering consultants for the Town of Dauphin Island, ahead of beach and dune renourishment. The Phase I survey project area (Area of Potential Effects APE) extends from the Public Beach Access at the Old Fishing Pier to several hundred feet west of the Town's West End Beach Park at the western end of Bienville Blvd. Although the project area has no Township Range and Section (TRS), it falls within the USGS Fort Morgan Quadrangle map. The entire area was inspected visually by a pedestrian survey followed by a systematic magnetometer survey of the Gulf of Mexico shoreline [Figures 2-3].

Figure 2. Early aerial photograph of Dauphin Island looking west (https://i.pinimg.com/originals).

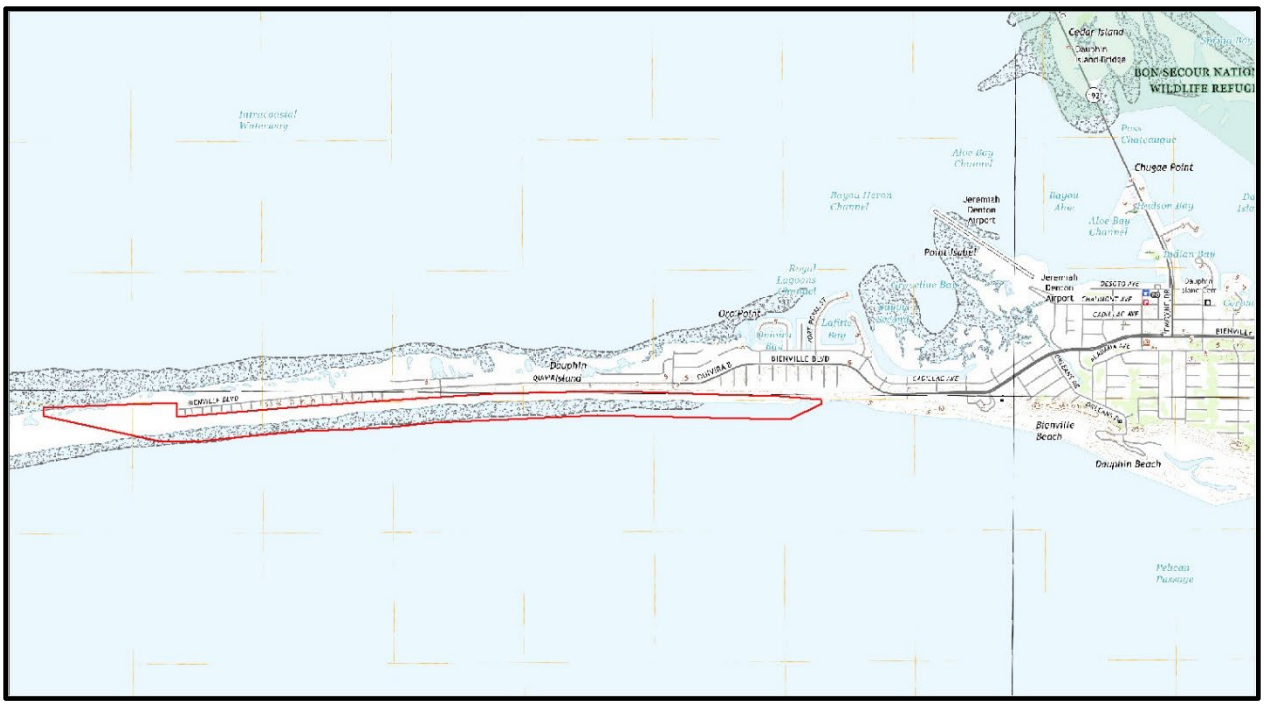

Figure 3. USGS, 7.5-minute quadrangle map showing West End APE in red.

The beaches of the West End of Dauphin Island are affected by longshore sand transport and cross-shore migration of the barrier island. Beach renourishment entails a large sand dune and a wide beach south of the dune, which will maintain the natural habitat for wildlife and protect the

area's infrastructure for housing and recreation. The firm further recommends continued beach renourishment as dredging facilitates to sustain the West End beaches (SCE 2023).

Cultural and Historic Background

Prior to European presence in Mobile Bay, prehistoric peoples occupied Dauphin Island for millennia, thriving on the abundant estuarine resources, namely oysters that propagated in the bay. The Dauphin Island shell mounds (1MB72) discussed below, represent the prehistoric occupation of the Island, spanning 3,000 years of settlement. This section summarizes the culture history of the Island. It should be noted that the western side, and particularly, the APE, has virtually no known archaeological sites.

This can be explained by the significant and recurring subsidence that occurred to the island over the millennia, and especially its western half. The eastern portion of the island is wide, in some locations measuring a 1 mile north to south and with sand dunes as much as 40 feet high. There is also mature maritime forest, which helps to stabilize the landscape. However, on the west end, the island is narrow, flat, with no real sustainable vegetation, and is subject to overwash from storms (SCE 2023) [Figure 4]. The section that follows is based on recorded sites from the eastern half of the island and associated mainland. This is not to say that the Island's early occupants did not venture to the west; however, permanence was not feasible. And it is clear that by the 1800s, the western half of the island had been washed away by storms, though later to be reconstituted as barrier island do (SCE 2023).

Figure 4. West End of Dauphin Island after Hurricane Katrina 2005 (USGS after SCE 2023)

Paleoindian Period (ca. 12000 BC- 8000 BC)

The earliest human occupation of Alabama dates to the Paleoindian period. Paleoindians entered North American and arrived in the Southeastern United States near the end of the Pleistocene, more than 14,000 years ago. Glaciers covered much of the northern half of the continent with much of the earth's water frozen in ice. Climatic conditions were substantially different from today. The region was drier and cooler, sea levels were significantly lower (as much as 75 meters below sea level), and the Gulf Coast shoreline extended roughly 100 miles seaward of its present location. Modern coastal areas, which are now flat, low and wet, were formerly dry. Inland drainages, springs, and wetlands were virtually non-existent, and the water table was much lower. Fresh water was scarce and available only in rain-fed water ponds and lakes, and deep sinkholes fed by springs, most plentiful in the karstic limestone formations. These water sources supported rich natural communities of plants and animals. Paleoindians took advantage of these resources, subsisting on hunting, fishing, and collecting a wide range of fauna and flora (Anderson and Sassaman 2012:36-59; Dunbar 1991; Halligan et al. 2016; Milanich 1994:37-59).

Relative to later cultural periods, the Paleoindian period is sparsely represented. This is because much of its associated archaeological remains now lie underwater, caused by sea level rise, while their inland manifestations are generally buried under later site occupations or by natural soil deposition. Paleoindians lived in small, mobile groups, recorded as ephemeral camps and procurement sites. Limited preservation of such sites is due to their great antiquity and occupations by subsequent groups. Most of the Paleoindian record consists of stone tools and debitage but some bone and ivory. The principal diagnostic stone tool of the period is the lanceolate-shaped point, Clovis, associated with hunting now extinct megafauna such as the mastodon and the giant bison (Dunbar and Hemmings 2004; Dunbar and Webb 1996).

Extensive research on the Paleoindian period in Alabama has been conducted by University of Alabama archaeologist, Eugene Futato (2011), who manages the Alabama Paleoindian Point Survey database. Some of the most important Paleoindian sites in Alabama are located on the Tennessee River, in northern Alabama, which has produced more than 200 fluted points. They also include Dust Cave, near present-day Florence and the Stanfield-Worley Bluff Shelter site in Colbert County [Figure 5].

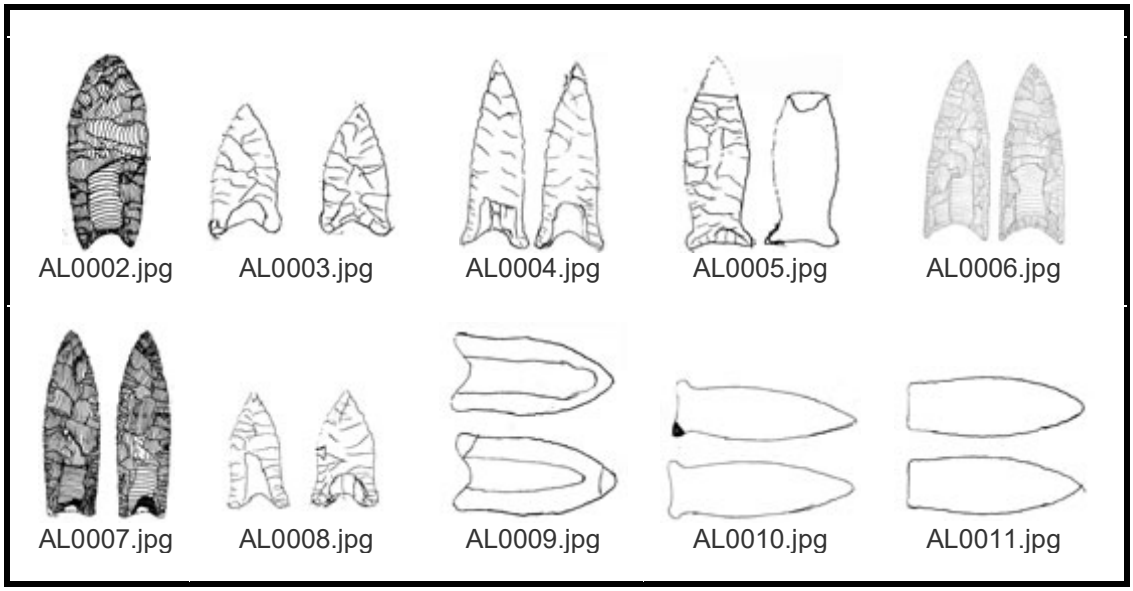

Figure 5: Examples of Paleo-projectile points recorded in the Alabama Paleoindian Point Survey database (Futato 2011).

Archaic Period (ca. 8000 BC-1000 BC)

At the end of the Paleoindian Period (the beginning of the Holocene) in the Southeast, the climate began to resemble today's climate, being much warmer and wetter than previously. The sea level had risen to within 10 meters of its present level and continued its rise during the period. By the Archaic Period, people had greatly diversified their subsistence, and a wide variety of extant animal and plant resources were exploited. There is some evidence that plant domestication began during the Archaic stage. Archaic settlements appear to be seasonally occupied as base and special use camps.

The Archaic Period is the longest period of cultural development in pre-Columbian North America. It is divided into three periods reflecting the gradual fluctuation in climate until current conditions were reached in the last stage. Important advancements include construction of mounds and earthworks in association with larger settlements and the establishment of long-distance trade. Additionally, the Archaic Period is marked by a greater diversity of artifacts than is recorded for the Paleoindian Period. Projectile points are smaller and triangular with notched or stemmed bases along with scrapers and knives. Ground stone tools, such as celts, and ornaments, such as pendants, make up the Archaic assemblage as well as gourd and basket containers, and wooden tools and dugout canoes (Milanich 1994:61-87, 95-100).

The end of the late Archaic is defined by the appearance of fiber-tempered ceramics in the greater Southeastern United States. Cultural changes include increased populations and a high reliance on aquatic, estuarine, and marine resources. Regional settlements begin to be established, centered around mounds. Influences from the lower Mississippi Valley, known as the Elliott's Point Complex, is also noted at this time. It is marked by a distinctive assemblage of baked clay balls, microliths, and exotic items (Milanich 1994:95, 97-98; Thomas and Campbell 1991).

Several sites in Alabama preserve artifacts and earthworks from the Archaic period. One especially noteworthy site is Russell Cave in Jackson County, which documents more than 9,000 years of human habitation from the Archaic through the historic era (Griffin 1974; NPS 2023) [Figure 6].

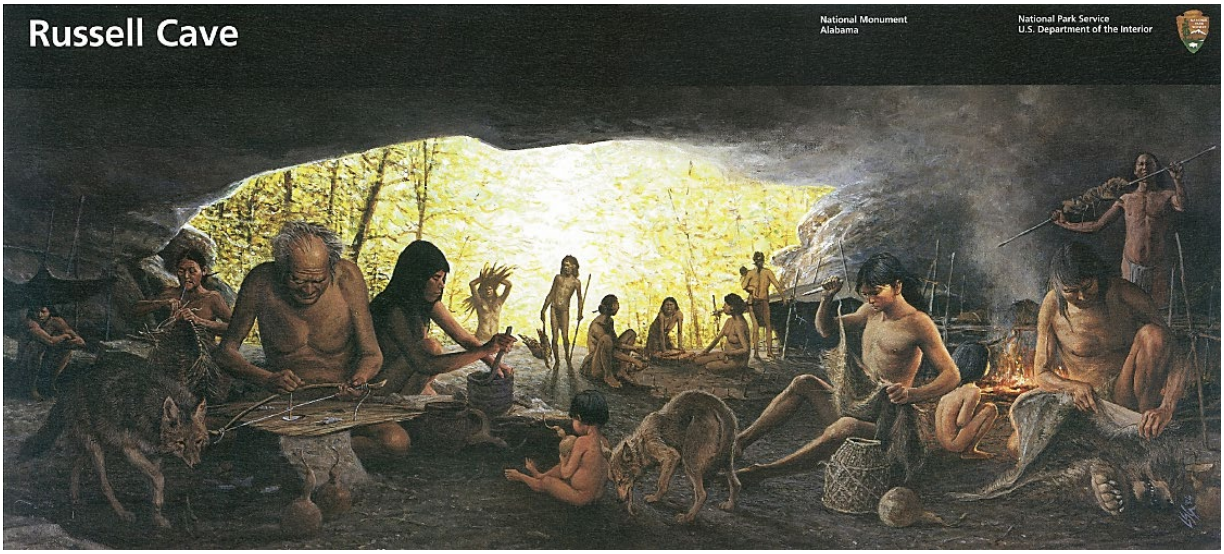

Figure 6. Hypothetical rendering of early occupants of Russell Cave (NPS 2023).

The Woodland Period (1000 BC-AD 1000)

The Woodland period in Alabama is characterized by increasing cultural complexity and population growth, which began about 1000 BC and lasted until about AD 1000. It included the advent of farming, pottery-manufacture, use of the bow and arrow, and elaborate mortuary practices. Settlement patterns established in the Late Archaic, that is, spring and summer residential base camps on creek or river floodplains, with fall and winter or wet-season camps in the uplands, continued into the Woodland period (Brown et al. 1996; Walthall 1980). Archaeologists divide the Woodland period into Early, Middle, and Late (Walthall 1980) [Figure 7].

The Early Woodland period dates from approximately 3,000 years ago to 1,000 years ago. During this time period, sedentism increases with the appearance of substantial villages (Milanich and Fairbanks 1980), with many communities located along the Gulf coast and in Alabama's river valleys. Extensive trade with peoples to the north and west also occurs (Bense 1994; Gibson 1974).

Figure 7. Hypothetical rendering of a Woodland settlement (from the Encyclopedia of Alabama 2023).

Another key development during the Early Woodland period is the construction of earthen mounds. Mound-building, believed to have originated in what is now Louisiana during the Archaic, occurs throughout eastern North America. Early mounds in Alabama were small and conical, below which were placed burial pits of high-status individuals. Villages were located in close proximity (Walthall 1980).

Along the Alabama coast, this period is characterized by fiber-tempered ceramics being replaced by sand-tempered Alexander and Tchefuncte related ceramics, and the introduction of Deptford pottery from Georgia. In southern Alabama, two ceramic types occur: Bayou La Batre and Alexander. Bayou La Batre is most commonly found in the Mobile-Tensaw delta, along Mobile Bay, and on the lower Tombigbee River (Fuller 1998; Jenkins 1982; Stowe 1990; Walthall 1980), the general study area [Figure 8].

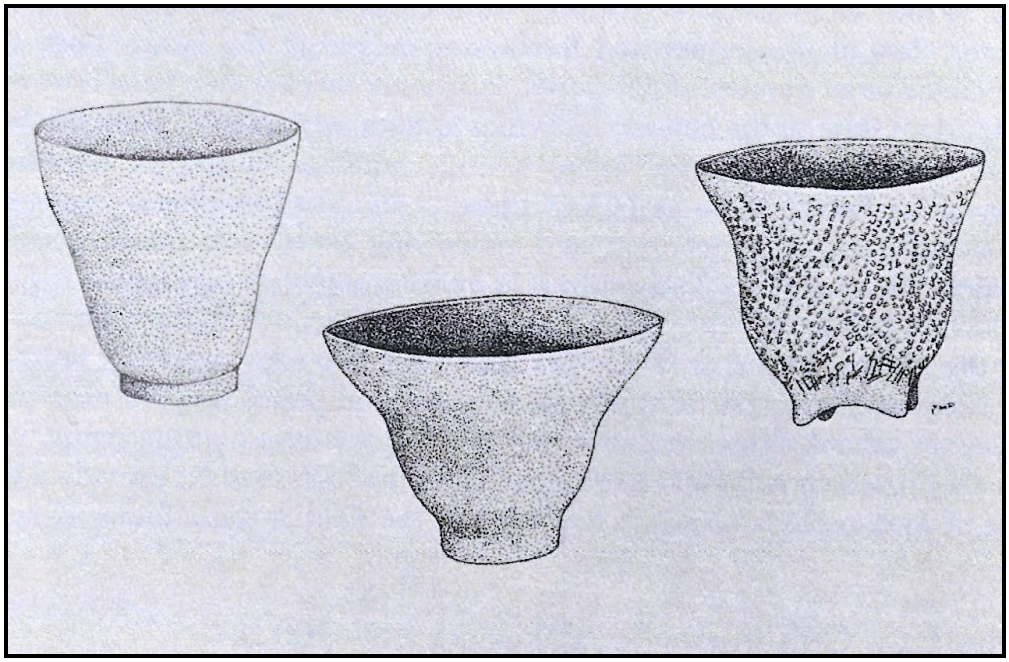

Figure 8. Bayou La Batre vessels (from Walthall 1980)

Middle Woodland "culture", which followed, was strongly influenced by the Hopewell Ceremonial Complex, an ideology with material trappings found in the Ohio Valley and other parts of the Midwest and spread southward. It is characterized by large earthworks, including conical mounds with exotic grave offerings, such as copper, mica, galena, and seashell (Morse and Morse 1983:162-163). The Oakville Indian Mounds, southeast of Moulton in Lawrence County, are excellent examples of these structures [Figure 9]. Groups of conical mounds likewise are found in the Tennessee River Valley and the central Tombigbee River Valley. Platform mounds also began to be constructed, as is recorded at the Walling site in north Alabama. Another important Middle Woodland site is the Pinson Mounds, located in western Tennessee, with 12 conical and platform mounds with elite burials (Walthall 1980).

Figure 9. Platform mound associated with the Oakville Indian Mounds site complex (Encyclopedia of Alabama 2023).

Middle Woodland period pottery corresponds to two phases of the Santa Rosa culture, Blakeley and Porter. Blakeley (ca. 100 BC-AD 150) shows a refinement in temper and paste quality from the previous period. Zoned decoration increases, illustrated by Alligator Bayou Incised and Santa Rosa Punctated (Fuller 1998). Basin Bayou Incised appears during the Blakely Phase, and Santa Rosa Stamped appears more frequently. Swift Creek Complicated Stamped, found in Georgia and Florida, appears in the Mobile-Tensaw Basin area (Fuller 1998).

The Porter phase (ca. AD 1500) extends from Mobile Bay into the lower Tombigbee Valley. It is marked by the enhancement of pottery quality with the use of finer grained paste and temper. Basin Bayou Incised and zone-decorated pottery become common. One technological introduction is the slightly flared rim with a notched lip (the Franklin Rim). Later, Weeden Island decorative types, such as Weeden Island Incised and Carrabelle Incised, also occur (Fuller 1998).

The Late Woodland period began about AD 500 and lasted until approximately AD 1000. The mound centers expanded their functions from mortuary to civic and ceremonial hubs. In coastal Alabama, new pottery types of the Qualaforma ceramic complex are produced. They are documented from Coastal Louisiana to Florida by polychrome painted vessels in barrel-shaped and anthropomorphic forms (Blitz and Mann 2000). The Late Woodland period in southern Alabama is represented by four cultural phases: Tates Hammock, Mcleod, Coden, and Tensaw Lake (Fuller 1998). The phases are represented by distinct ceramic trends as follows:

The Tates Hammock phase (AD 400-750) develops from the Porter Phase with an emphasis on check stamped ceramics. For coastal Alabama, the Tates Hammock phase is characterized by

sand-tempered Weeden Island pottery types, especially Wakulla Check Stamped, and grog-tempered Coles Creek varieties. Rectilinear decoration on vessel necks become a common feature of Tates Hammock (Blitz and Mann 2000; Walthall 1980).

The Coden phase (ca. AD 750-1100) develops out of Tates Hammock as a local manifestation of coastal late Weeden Island (Fuller 1998). It is represented by check stamped pottery, primarily Wakulla Check Stamped and Weeden Island Plain (Fuller 1998).

The Tensaw Lake phase (ca. AD 850-1100/1200) is characterized by a grit-tempered (with some types made with very coarse temper) paddle stamped pottery complex of the Tuckenbaum phase represented in the lower Tombigbee Valley and Gainesville complex in the lower Alabama River Valley (Brose et al. 1983; Fuller 1998; Jenkins 1982; Sheldon 1985).

The Mcleod Phase (ca. AD 850-1100/1200) reflects another paddle stamped ceramic complex present in the Mobile-Tensaw basin and lower Tombigbee Valley. This pottery is sand-tempered, with check-stamped and simple-stamped decoration. Mcleod also includes Wakulla Check Stamp and minor occurrences of other Weeden Island types (Fuller 1998).

Mississippian Period (AD 1100-1700)

The Mississippian period represents the height of Southeast native culture before European presence. During this time, many societies had become chiefdoms with stratified levels of organization, the hubs of which were large, platform mound centers, which became increasingly reliant on agriculture. Along the northern Gulf Coast, this phenomenon occurred somewhat later and more gradually than in the interior river valleys. In the case of the coastal communities, access to two major river valleys, forested uplands and bottomlands, tidal marshes, sheltered sounds, open bay margins, interior bays, and a coastal strand would have offered people a wide range of resources, making them less dependent on intensive farming that supported inland groups. Mississippian pottery from the Gulf area, as compared to earlier types, is distinguished by being tempered with crushed shell. Projectile points for this period are triangular but significantly smaller than previously, well suited for use with a bow and arrow (Fuller 1998).

Three Mississippian periods are identified for southwest Alabama, and the larger APE area. They are Andrews Place (AD 1100-1250), Bottle Creek (AD 1200-1550), and Bear Point (AD 1550-1700). Andrews Place sites are identified by Moundville Incised and other early Mississippian ceramics. Some of these sites are directly tied to earlier Late Woodland occupations. For example, at Andrews Place Site (lMBl) Moundville related ceramics were stratigraphically found directly above a Late Woodland Coden phase stratum (Fuller 1998).

The peak of Mississippian culture in the APE region occurs during the Pensacola variant, Bottle Creek phase (ca. AD 1200-1550). The type site for this phase (Bottle Creek Shell Mounds, 1BA2) is a mound complex located on Mobile Tensaw delta, Mobile Bay [Figure 10]. Midden remains point to a rich diet combining fish, shellfish, wild game, and corn, indicating diverse subsistence practices. Pottery types typically associated with Bottle Creek Phase sites varied. They include Bell Plain, variety Stockton; D'Olive Engraved; D'Olive Incised; Graveline Plain variety, Devils Bend; Mound Place Incised, varieties McMillan and Waltons Camp; Moundville Incised variety Bottle Creek; Pensacola Incised, varieties Gasque, Holmes, and Jessamine; and Salt Creek Cane Impressed. Other artifacts recovered associated with this time period include

small triangular stone projectile points and microliths, bone perforators and fish hooks, modified whelk and Busycon shell fragments, cut mica, and ochre (Fuller 1998; SEARCH 2019).

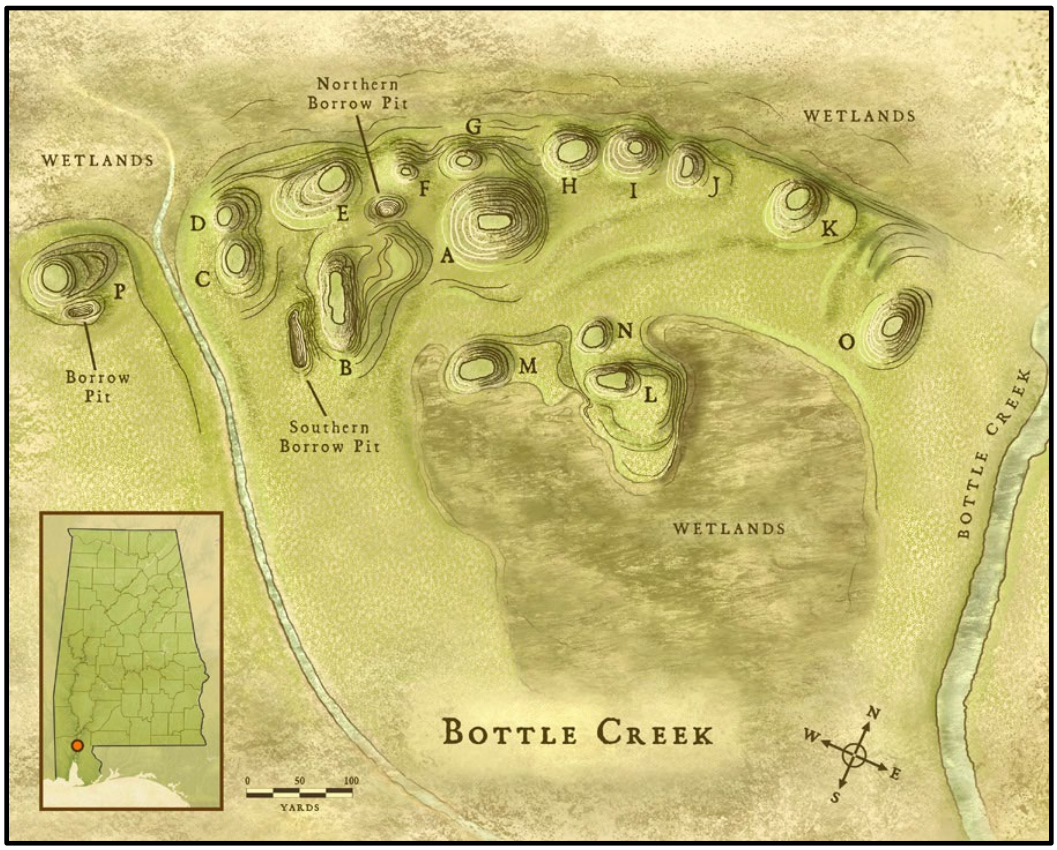

Figure 10. Early map of Bottle Creek Mounds (Encyclopedia of Alabama 2023).

The Pensacola variant, Bear Point phase (ca. AD 1550-1700) is named for a mound and mortuary site on the west side of Perdido Bay. It represents the Late Mississippian period in the region. The Bear Point phase is derived from the Bottle Creek phase and includes extensive shell middens and upland farming villages (Fuller 1998). Shell-tempered Pensacola and Moundville series pottery are characteristic of this phase. Principal types include Pensacola Incised, varieties Bear Point, Perdido Bay, Pensacola and Matthews Landing; D'Olive Incised variety Amica; Moundville Incised, variety Douglas; Mississippi Plain variety Pine Log; and Bell Plain (Fuller 1998). Other artifacts recovered from Bear Point contexts are shell gorgets [Figure 11], beads and pins; and copper adornments.

Figure 11. Whelk gorget, Middle Mississippian Period, National Museum of the American Indian, Smithsonian Institution, 18/853) (Smarthistory 2023.).

Protohistoric Period

The Protohistoric period is defined by sites of indigenous peoples influenced by early European contact. Bottle Creek and Bear Point phase sites have produced sixteenth-century European artifacts, such as facetted chevron beads, religious items, weapons, and coins. This period of contact and interaction is also evident at the Strongs Bayou site (1BA81), near Gulf Shores the Pine Log Creek site (1BA462), in northwest Baldwin County, and the Doctor Lake Site (1CK219) in Clarke County. Two ceramic complexes associated with protohistoric components, the Guillory Complex and the Ginhouse Island Complex, have been identified (Fuller 1998).

The Guillory Complex was recorded at Little Dauphin Island sites, 1MB50 and 1MB57, within the APE. The pottery has distinctive blocky, angular, shell temper (Fuller 1998). The Ginhouse Island Complex is identified by distinct burial practices between coastal groups and those occupying the Mobile-Tensaw basin. Coastal burials were placed in earlier period mounds or large areas of mass interment capped with sand. The Mobile-Tensaw delta peoples used small mounds built exclusively for burial, while delta communities buried the dead in urns (Fuller 1998).

Early Exploration and European Settlement (1519-1812)

Mobile Bay, the broad APE for this project, was attractive to early European explorers for its proximity to the Gulf of Mexico and its access to waterways to the interior. In 1519, Alonzo Alvarez de Pineda was the first European to map the coastline. Later Spanish explorers passed

through the region but without establishing permanent colonies, with Spain's eventual goal being to secure Pensacola to the east. However, the French settled in the region including Dauphin Island (Kirkland 2008; Maloney 2012; Young 1988).

In 1699, French explorer brothers Pierre Le Moyne D'Iberville and Jean-Baptiste Le Moyne de Bienville came to the mouth of Mobile Bay, determined to claim land for France. They landed on Dauphin Island where they discovered piles of skeletal remains, likely a native cemetery. Consequently, the brothers named the island "Isle Du Massacre", "Massacre Island", thinking it was a site of massive killing. In 1702 Bienville built a post on Dauphin Island, which served as a port of entry to Fort Louis de la Mobile, 30 miles upriver, and later to the colony of Mobile. In 1711 he renamed the island "Dauphine" in honor of Marie Adelaide of Savoy, wife of the Dauphin Louis (XIV), the Duke of Burgundy, who had commissioned the original expedition (Kirkland 2008; Maloney 2012; NPS 2022; Young 1988) [Figure 12].

Figure 12. Arms of the Dauphin of France, depicting the fleur-de-lis and the dolphin (*Velde, www.heraldica.org. 2022).*

During the 18th century, the French used Dauphin Island to off load cargo and lighten shipments to be received in Mobile, the capital of French Louisiana. (Dauphin Island Park and Beach 2017; Kirkland 2008; Young 1988). French Governor General of Louisiana, Antoine de la Mothe Cadillac, lived on Dauphin Island from 1713 to 1717, building a substantial home. At that time he noted that most of the western portion of the island was nothing but sandbanks and white sand, while the northern perimeter of the island was bordered by woods, mostly flatwood pines. He also noted old Indian shell mounds, which likely referred to the Dauphin Island mounds (1MB72) on the northeast side of the island (La Mothe Cadillac 1713 after Rowland and Sanders 1929).

In 1762, France ceded the island to Spain, which retained possession until the following year, when England gained title by the Treaty of Paris. The American Revolutionary War (1775-1783) ultimately ended British control of Mobile and West Florida. In the negotiations, Spain acquired West Florida (Fabel 2007). Spain governed West Florida, as well as Mobile and Dauphin Island until 1812 (Bunn 2016).

US Territory and State (1812-1860)

During the War of 1812 against Britain, the United States created the "Mississippi Territory", establishing Mobile County, including Dauphin Island, as a means to reclaim it. The British regained the area for a few months, but by 1817, the United States added the Alabama Territory (Maloney 2012).

The Creek War of 1813-1814 caused significant upheaval to American settlers in the Gulf region, most of it taking place in Alabama and along the coast. The War began as a conflict within the Muscogee tribes, but the United States, Britain, and Spain became involved. British traders and Spanish colonial officials in Florida backed the Red Sticks (Upper Creeks) to thwart United States expansion into their territory. The United States formed an alliance with the Lower Creek Muscogee faction in addition to the Choctaws and Cherokees. When the War ended, General Andrew Jackson forced the Creek confederacy to surrender more than 21 million acres in what is now southern Georgia and central Alabama (Green 1998:43) [Figure 13].

After the Red Sticks were defeated, they resettled in southern Alabama in the northern portions of Mobile County and the southern portions of Washington County. This group eventually became the MOWA Band of Choctaw Indians (Lewis 2007; Matte 2007).

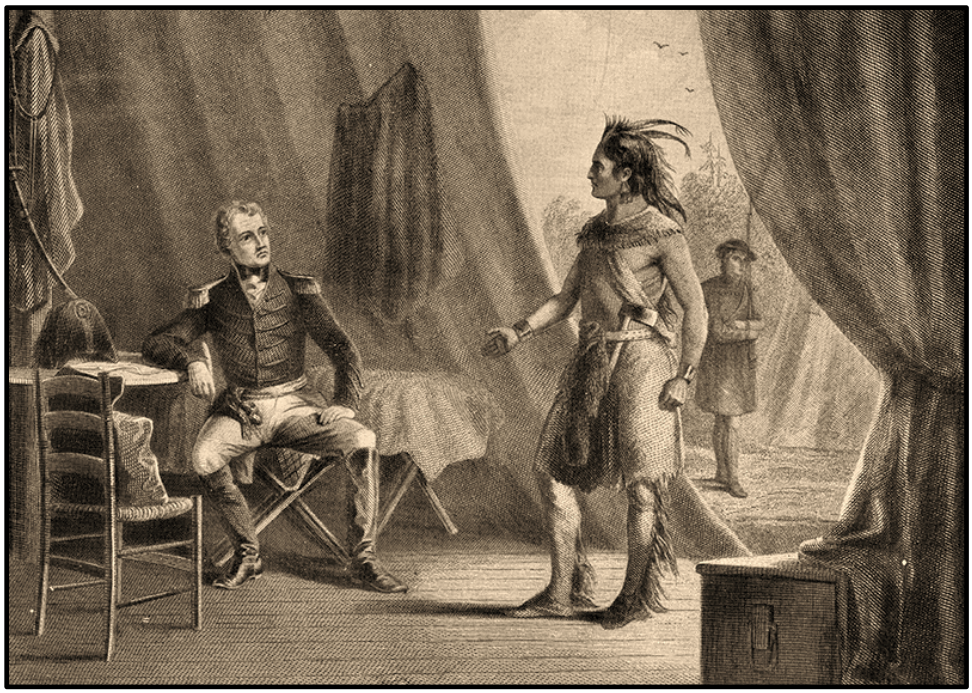

Figure 13. Drawing of treaty signing at Ft. Jackson, end of the Creek War (from Green 1998)

Alabama achieved statehood in 1819. Mobile and its related ports were the commercial center of Alabama. Slave-based plantation agriculture, with cotton its principal crop, became the State's staple (Kirkland 2012). Prior to the Civil War, cotton was transported down river to Mobile, where it transferred to oceangoing vessels for mills in the North and in Europe. Corn, flour, and whiskey were shipped upriver (Bergeron 1991:4-6).

Fort Morgan and Fort Gaines were built by the United States to protect the entrance to the bay. Fort Gaines was erected on Dauphin Island and Fort Morgan across the Mobile Channel, though

construction over the years waxed and waned, due to funding issues. Fort Gaines was finally completed in 1857 (Matte 2007; Wheat 2008). Ships entered the bay by either the Main Ship Channel to the east of Dauphin Island or Grant's Pass to the west of the island (Grant's Pass). Until after the Civil War, large oceangoing vessels could not reach Mobile because the channels to the bay were too shallow. Ships had to anchor at Mobile Point on the east side of the Main Ship Channel and lessen their cargoes before reaching the city (Amos 1990:114-118).

Civil War and Late Nineteenth Century (1861-1899)

In 1861 Alabama seceded from the Union, making Mobile a ripe target for the Union Army. The Confederate Army fortified the region, including completing construction of Fort Gaines. They laid torpedoes, piles, sunken ships, and other obstacles to prevent naval invasion. The Union navy blockaded the port, as well as the entire Gulf coast, in an attempt to cut off supplies to the South (Bergeron 1991:18). In 1864, the Union carried out its last naval engagement capturing Mobile Bay. Admiral David Farragut led the attack, decisively defeating the Confederacy and capturing Fort Gaines and Fort Morgan (Schroer 1975). During that month, the Confederate Army surrendered, ending the war. Located at the southeast corner of the island, Fort Gaines was rebuilt and later preserved; however, beach erosion has now made it one of the 10 most endangered Civil War battlefields and America's 11 Most Endangered Historic Places (NPS 2022) [Figure 14].

Figure 14.1958-60 aerial photograph of Fort Gaines (dauphinislandhistory.com).

Following the War, the Mobile Board of Trade was created to reestablish the State's shipping economy. This was augmented by enhancing the railroad system. The federal government eventually funded dredging to deepen the harbor (Kirkland 2012; Lewis 2007).

Twentieth Century and Today

At the beginning of the turn of the century Dauphin Island was occupied by local residents and tourists, with the first hotel being built sometime around 1915. However, major storms in 1906 and 1916 caused extreme damage to the island, negatively affecting its economic development (Young 1988). On Dauphin Island, a fishing competition, known as the Alabama Deep Sea Fishing Rodeo, began in 1929, helping reignite tourism (Bernston 2012; Maloney 2012) [Figure 15].

Figure 15. Early photograph of Alabama's Deep Sea Fishing Rodeo (ADSFR 2023).

While the Great Depression brought major economic problems to the country, Mobile maintained its status as a major port, continuing to export cotton and timber. Large portions of Dauphin Island were purchased by Gulf Properties Corporation, a real estate and development company, which brought large numbers of out-of-state visitors during the 1930s and 1940s. A bridge was built to connect the island to the mainland (Derbes 2012; Maloney 2012).

In recent years, Dauphin Island has become a resort community and center for marine research and public outreach associated with the Dauphin Island Sea Lab (established in 1971), northeast of the project area. It also has added to the Island's economy by providing jobs and attracting visitors (Bernston 2009).

Apart from Fort Gaines, development has eliminated most evidence for pre-historic and historical occupations. Various historic structures, however, have been preserved, such as the Fort Gaines Officers'Quarters [Figure 16], which speaks to the heritage of this small island. Recent hurricanes, such as Frederic (1979), Katrina (2005), and Isaac (2021) as well as the Deepwater Horizon oil spill in 2010 have all contributed to site and shoreline erosion (Maloney 2012).

Figure 16. Ft. Gaines Officer's Quarters. Photograph taken in the 1930s (dauphinislandhistory.com).

Dauphin Island now serves as a challenging case study for shoreline erosion. The extreme dynamics of the coast, particularly along the southern perimeter, have been amply recorded (e.g., USGS 2022) [Figure 17]. This Phase I archaeological survey project is part of a current effort to replenish this same shoreline.

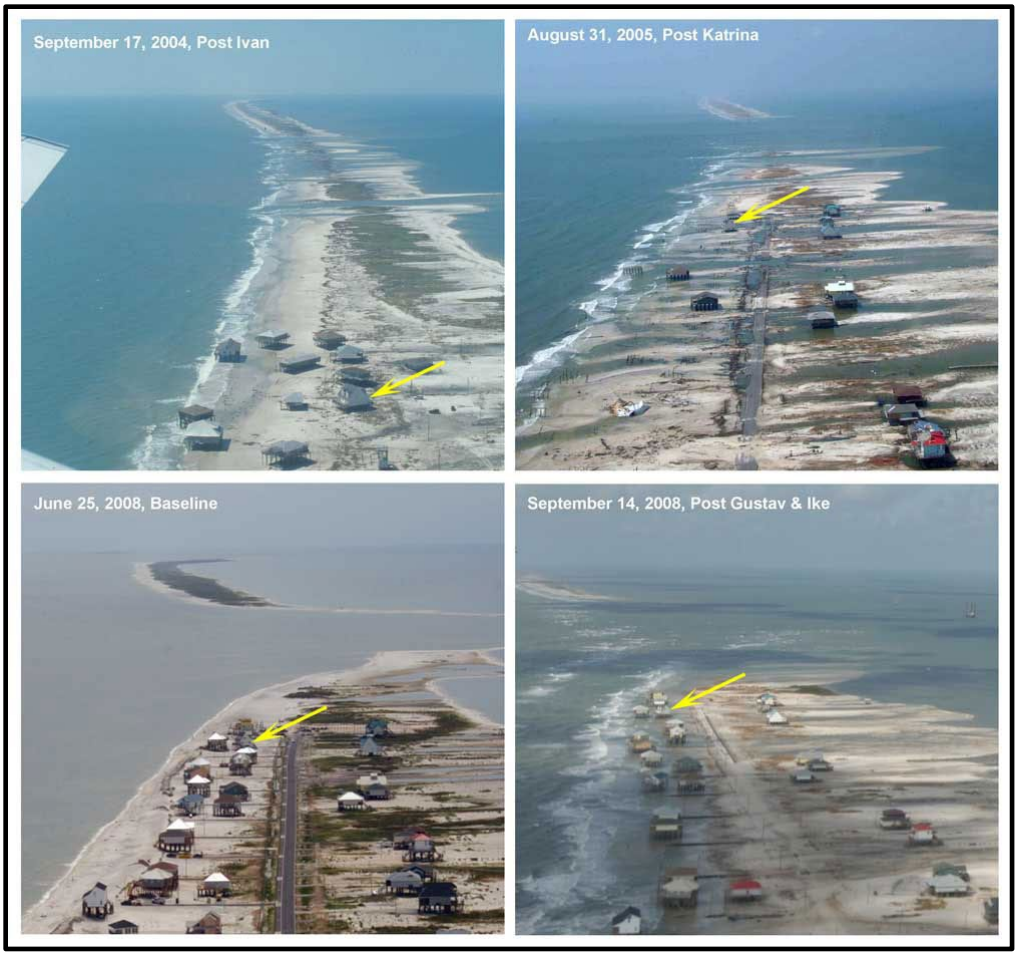

Figure 17. United States Geological Survey images showing the effects of wave erosion on the west end of Dauphin Island after recent hurricanes. The yellow arrows point to the coastline change in relation to a single house (USGS 2022).

Previous Research

According to the Alabama State Site File, from 1993 through 2023, 28 archaeological surveys were conducted in the APE area of Dauphin Island (1 mile radius). Of these surveys, only seven identified archaeological sites. Of the remaining surveys, five recorded significant sites, while the final two found sites without clear significance. In total 27 archaeological sites are recorded for the APE, nine on Little Dauphin Island, fifteen on Dauphin Island proper, and two offshore, classified as shipwrecks [Figure 18; Appendix I].

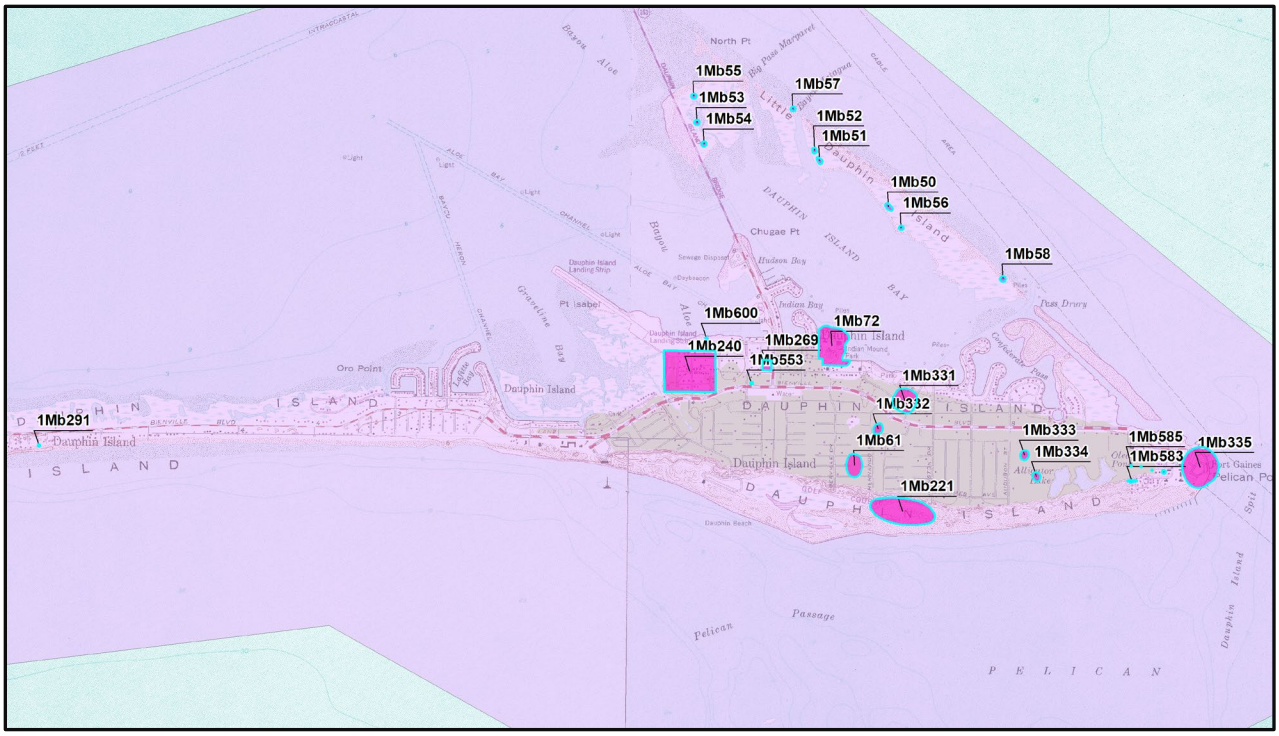

Figure 18. Map showing recorded archaeological sites on Dauphin Island. Note, the only recorded site in the West End (APE) is 1MB291, a 19th century shipwreck ultimately relocated (Alabama Site File 2023).

Little Dauphin Island sites, 1MB50-58, are prehistoric with small footprints (mostly artifact and shell scatter). Little is left of most of them, due to shoreline inundation, erosion, and development. Some early ceramic types as well as proto historic ones, suggesting these sites had considerable longevity. 1MB54, stands out because it was recorded as a large oyster midden (30' x 200' x 3'), before having been partially destroyed for fill. This site speaks to the island's potentially robust occupation during prehistoric times. As Little Dauphin is located behind Dauphin Island, its protection from Gulf storms, would have made it well-suited for long term settlement. No doubt, these sites were related to the one, large shell mound complex, located on the northeast shore of Dauphin Island proper, known as Shell Mound Park, 1MB72 [Figure 19]. A Woodland period settlement, only part of it remains due to a series of development projects (see Vernon 1976, SEARCH 2019, etc.). Artifact scatter at some of these Little Dauphin Island sites show early European presence, though no major sites are recorded.

Figure 19. Eastern View of Northern Shell Ridge (1MB72), Alabama Geological Survey. Photograph, January 1940 (from Knight 1976).

On Dauphin Island, apart from Shell Mound Park, only one other prehistoric site has been reported. This is a possible shell midden located on the southwest side of Fort Gaines (1MB335), an intact Civil War period fort. Its identification has not been confirmed.

The eight historic sites recorded on Dauphin primarily date to the Civil War with a few associated with the island's early 18th century French occupation. These include: (1) 1MB61, a scatter of cannon balls and historic pottery, located northeast of the APE. This French period site is likely developed now; (2) 1MB221 (Port Dauphin Village), once historic structures identified by structural remains and artifact scatter, located east of the APE; (3) 1MB240 (Graveline Plantation), recording base on historic descriptions; never archaeologically proven; northeast of APE; (4) 1MB332 (Cadillac Square), Civil War artifact scatter, northeast of APE; (5) 1MB333 (Audubon Sanctuary), Civil War artifact scatter, north and east of APE; (6) 1MB335 (Fort Gaines), intact, immediately east of APE; (7) 1MB584 (FS 4), historic artifact scatter dating to Fort Gaines (8) 1MB585 (FS-6), 19th century historic artifact scatter and possible structural remains; (9) 1MB586 (FS 8), historic artifact scatter and structural remains, dating from the mid-19th century to the mid-20th century, east of APE.

Previous research has indicated that the most significant prehistoric site on Dauphin Island is 1MB72. Other sites certainly existed and may still exist, based on archaeological surveys conducted on Little Dauphin Island, the land spit located on the north side of Dauphin Island. As discussed above, there, several sites were recorded. Additionally, the University of South Alabama has examined the south side of Dauphin Island, identifying indigenous pottery and the site of Port Dauphine (Knight 1976).

Bienville and D'lberville's account of quantities of human skeletal remains is associated with the southwestern side of the island. Extensive shoreline changes in the 18th century likely eliminated any evidence for sites in the low and unstable western area (Knight 1976). The eastern end of the island, particularly the northern portion, was higher and vegetated, making it more conducive to

early inhabitants. 1MB72, the Dauphin Island shell mounds, attest to this.

The University of Alabama (Knight 1976) conducted limited salvage excavations at the site for the US Department of the Interior, National Park Service for a set of boat slips. The results provided a baseline chronology for the region, extending back 3000 years and into the historic period.

The University's excavations at 1MB72 documented four prehistoric time periods. The first and earliest is known as Bayou La Batre-Tchefuncte. It is associated with pottery of the same name that is considered one of the earliest pottery complexes of the Gulf Coast of North America. This was a somewhat ephemeral occupation. The next phase dates to the Middle Woodland Period, identified by the presence of pottery from the Porter Marksville ceramic group. The third is a Late Woodland-Early Mississippian occupation associated with Weeden Island-Coles Creek pottery. The latest cultural period dates to the Mississippian Fort Walton period, represented by the Pensacola ceramic series [Figure 20], and to a lesser extent, Lake Jackson Fort Walton series. The latter occupation may have continued into the early 16th century, several sizable villages having been reported by the Spanish Explorer, Pineda (Swanton 1946:35). However, many of these sites were abandoned by the turn of the 18th century when the French settled the island for trading purposes. A representation of indigenous historic ceramics and European metals supporting these activities have been recovered.

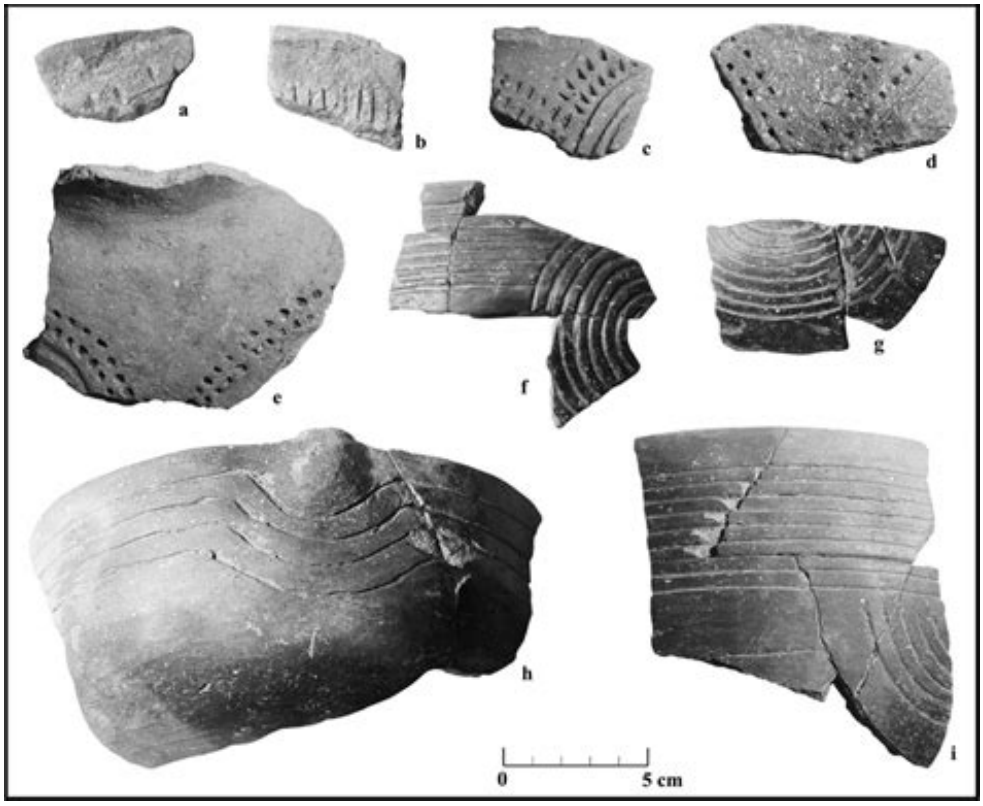

Figure 20. Fort Walton-Pensacola pottery from the Mobile Bay region (upper image from Florida Museum of Natural History; lower Weinstein, Richard A. and Ashley A. Dumas, 2008).

Dauphin Island shell mounds have undergone significant changes including unauthorized digging and collecting, shell mining for roads and lime production, building construction both on shore and offshore, and natural, environmental effects of the Gulf. Nonetheless, this National Register site suggests that Dauphin Island held a significant role in prehistory of the region. A contemporary site once located on the southeast side of the Island, but now destroyed (Knight 1976), points to a much more robust settlement complex during the Fort Walton period than 1MB72 alone represents. In fact, during both the Late Woodland and Mississippian periods, very broad Southeast networks connected communities, such as Mobile Bay, as shared ceramics demonstrate.

Fieldwork

On February 15, 2024, in preparation of beach renourishment, PCARG staff began the pedestrian survey for cultural resources on the approximately 4 miles of impact, right-of-way on the West End of Dauphin Island, Alabama. A systematic walkover was conducted in search of cultural material that may indicate the presence of a prehistoric or historic site. Much of the right-of-way was very narrow, and at times we had to walk under or around houses that are partially inundated. Nothing but late 20th century and early 21st century debris was observed in the pedestrian survey.

However, there was one site within the right-of-way that was recorded in the Alabama site files. Known as the Sevigny Street Shipwreck (1MB291), the remains were exposed after Hurricane George in the fall of 1998. The keelson was recovered, and it is now on display at Fort Gaines [Figure 21].

Figure 21. The remains of MB291 on display at Fort Gaines.

PCARG also conducted a systematic survey of the area with a hand-held metal detector and recovered no cultural material [Figure 22]. Images from Google Earth suggest the beach where the wreck was recovered from is long gone. Any remains from the salvaged wreck likely lie in the trough between the current waterline and the first longshore sandbar.

Figure 22. PCARG staff conducting systematic metal detector survey of 1MB291.

PCARG completed the walkover survey on the 17th and then began collecting magnetic data with a drone.

PCARG used Sensys' MagDroneR4 high resolution survey sensor flown on a DJI M350 quad copter drone with integrated survey grade GPS positioning to cover the right of way at 10-meter lane spacing [Figures 23, 24]. We chose this method as the most efficient because much of the area could not be walked or traversed by vehicle due to shore inundation. The MagDrone R4 is an ultra-portable magnetometer survey kit with five, three axis sensors spaced 50 cm apart for an area output of 3 to 4 ha per hour of high-resolution magnetic cartography. This method allows us to detect small, compact ferrous metal objects in the ground that might indicate settlement features from the past. Sampling at 200 hz, the MagDrone is able to filter out noise from the drone motors, net frequencies, and municipal infrastructure allowing us to analyze the data as we are collecting them and annotate the record for further analysis in real time.

On the 18th of February we began flying the transects at the far west end of the right-of-way working our way east down the beach. We sampled the entire area of impact at 10-meter lane spacings of which a large portion is intertidal surf zone [Figures 25, 26].

Figure 23. Assembled MagDroneR4, pre-launch.

Figure 24. MagDrone R4 takes flight on the West End of the survey area.

Figure 25. Aerial view of drone transects with highlighted anomaly as an artifact of the drone repositioning.

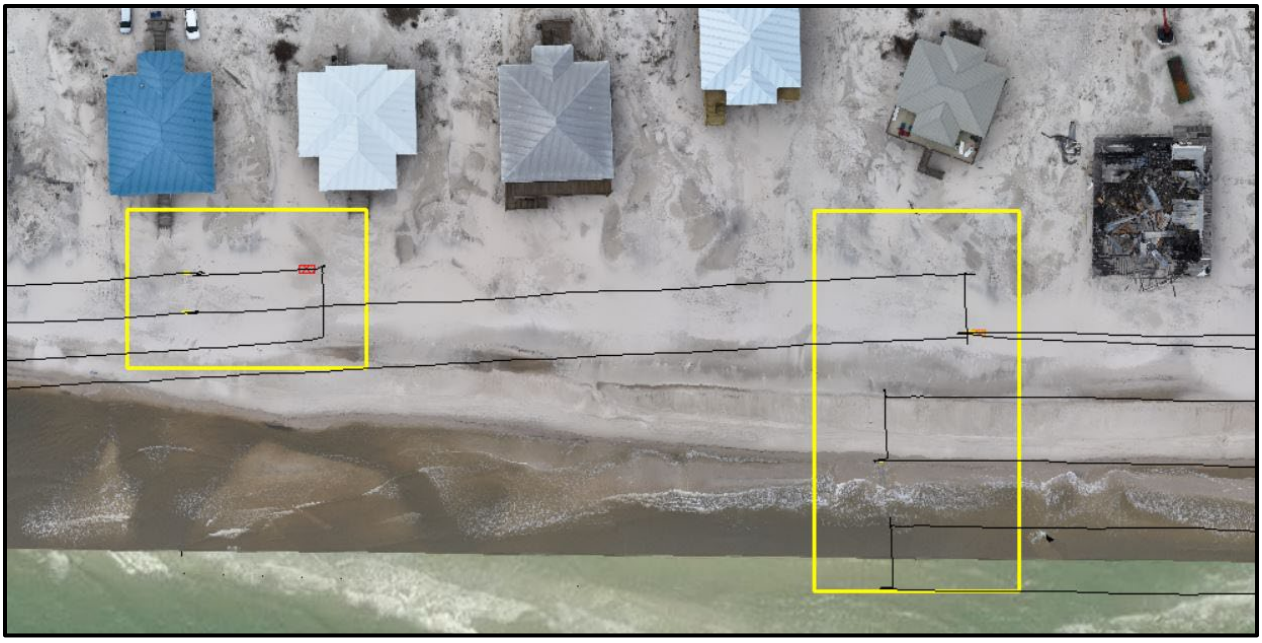

Figure 26. Aerial view of beach coverage with anomalies greater than 100 nt highlighted.

Magnetic Data Analysis

PCARG used MagDrone Data tool software to analyze the data collected and found no clusters of anomalies that might indicate a historic shipwreck or settlement of cultural significance. To ensure reliable target identification and assessment, preliminary analysis of the magnetic data was carried out in real time (as it was being generated). Using QGIS software, line-by-line analysis of the magnetic data was conducted to identify anomalies. Any identified anomalies were isolated and analyzed in accordance with intensity, duration, areal extent, and signature characteristics [Figures 27-30]. The results of the analysis indicated that there were no culturally significant magnetic signatures. Anomalies in the survey area were determined to be associated with modern residential structures and associated debris, features on the beach or in the adjacent shallow water that are associated with erosion control, such as markers, sheet pile, and debris from municipal infrastructure.

Figure 27. Survey plot of hits greater than 100 nt within the Dauphin Island West End impact area.

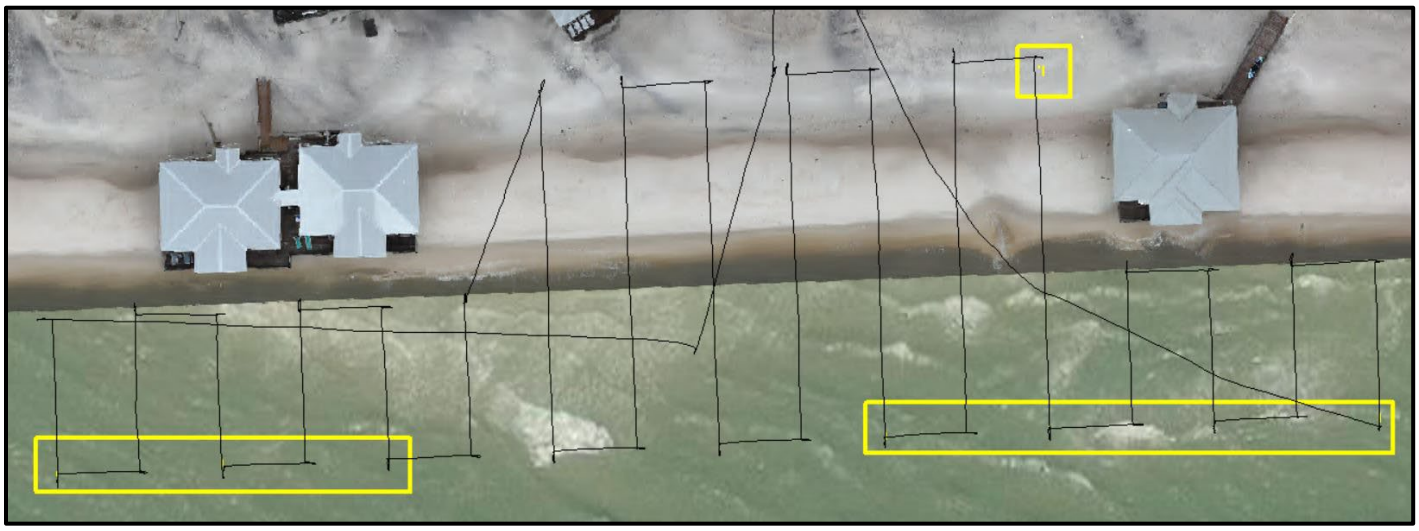

Figure 28. Aerial view of survey area showing coverage and annotated magnetic anomalies for further analysis.

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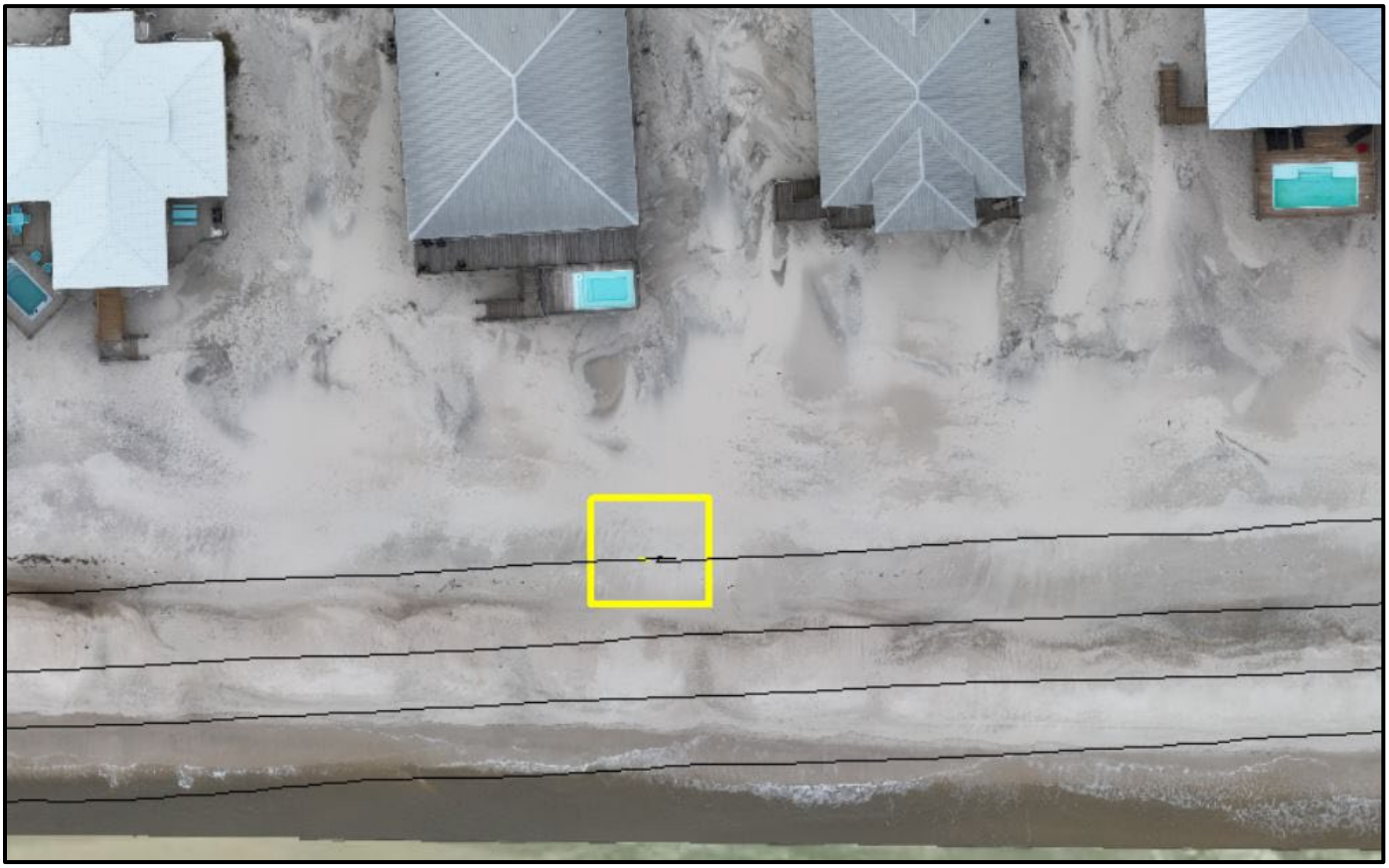

Figure 29. Aerial view of drone coverage showing annotated anomaly (in yellow) identified for analysis.

Figure 30. Aerial view showing transect coverage with highlighted area for further analysis. Small hits in the data at the end of the transects are an artifact of the drone repositioning and turning the sensor in the magnetic field.

Conclusions and Recommendations

Based on background research, visual reconnaissance, and magnetic data, PCARG could not identify any significant cultural resources in the APE. No observable cultural material of significance was observed on the surface during the pedestrian survey, and only one site has been recorded by the State of Alabama Master Site file in the survey area and that site was salvaged and moved in the late 20th century to Fort Gaines. Moreover, the magnetic data revealed no patterns or localized scatters of small ferrous metal objects that could indicate the presence of a culturally significant site such as a shipwreck or relict architecture. Additionally, even if undetected buried cultural resources exist, sand deposition in the APE will not penetrate the subsurface, affecting any undetected remains. Consequently, it is the opinion of PCARG that no additional investigation of the area is needed.

Protocol for Unexpected Discoveries

Should project activity expose any prehistoric or historic cultural resource not identified in the survey, the construction company under contract should cease operations and immediately notify the designated point of contact for SCE and the State of Alabama Historical commission with the nature and location of the exposure and a description of the material involved so an archaeological inspection and site assessment can be carried out.

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